

Date: Thursday, 9/14/2006 1:08:12 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : AFT X-TUBE EXT HEIGHT(-013)
 Job Number : 28596
 Estimate Number : 10563
 P.O. Number : N/A Part Number : D205596107
 This Issue : 9/14/2006 S.O. No. : N/A Drawing Number : D205596107
 Prsht Rev. : NC Project Number : N/A
 First Issue : N/A Type : LANDING GEAR Drawing Revision : A
 Previous Run : 28052 Material : N/A
 Due Date : 9/22/2006 Qty: 1 Um: Each
 Written By :
 Checked & Approved By : JA 06.09.04
 Comment : Est Rev:D 05.03.21 Added bending procedure KJ/JLM

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile & type labels per PPP D205-596-107CHG001

KS 06.09.14

2.0 D2890 Aft Crosstube



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2890 Aft Crosstube B28491

3.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Mark 20.36" for cutting from tangential line in the straight section from D2890 as per Dwg wall template.

EL 7-5-23

4.0 QC6 DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Inspect dimensions. Conformity check and sign off by engineering.

D205-23 ①

See E-mail for Dims

5.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-107

JP 7-5-23

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

JB 7-5-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/14/2006 1:08:12 PM
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Drawing Name: AFT X-TUBE EXT HEIGHT(-013)

Job Number: 28596

Part Number: D205596107

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Touch up ends of the tube with Chemical Conversion Coat per QSI 005 4.1

Jb 7-5-24

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Jb 7-5-25 @

8.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

ml 07 07 23

1-Prime inside and outside with Immron per QSI 005 4.2

9.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

2T 07 07 24

10.0

D2856600

Abrasion Strip



Comment: Qty.: 1.6810 f(s)/Unit Total : 1.6810 f(s)

Pick:

Qty Part number

Description

Batch

2 D2856-600(10.09") Abrasion Strip

26650

2T 07-07-25

11.0

D29401

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number

Description

Batch

2 D2940-1

Support

32167

103-886

2T 07-08-02

12.0

MS2192028

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number

Description

Batch

4 MS21920-28

Clamp

103896

2T 07-08-02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: D Date: 5/8/08
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/14/2006 1:08:12 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT X-TUBE EXT HEIGHT(-013)

Job Number: 28596

Part Number: D205596107

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install abrasion strips per QSI 035 position using DT8582. Install supports and clamps per Dwg D205-596-107. Torque clamps to 80-100 in lb. Seal edges of support using Sikaflex

67-08-02

A/R Sikaflex -291

Expiry date:

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Er 07/08/08 (1)

15.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-107

Location:

PPP Rev:

C

07/08/08 (1)

16.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

07/08/08 (1)

Job Completion



07/08/08

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

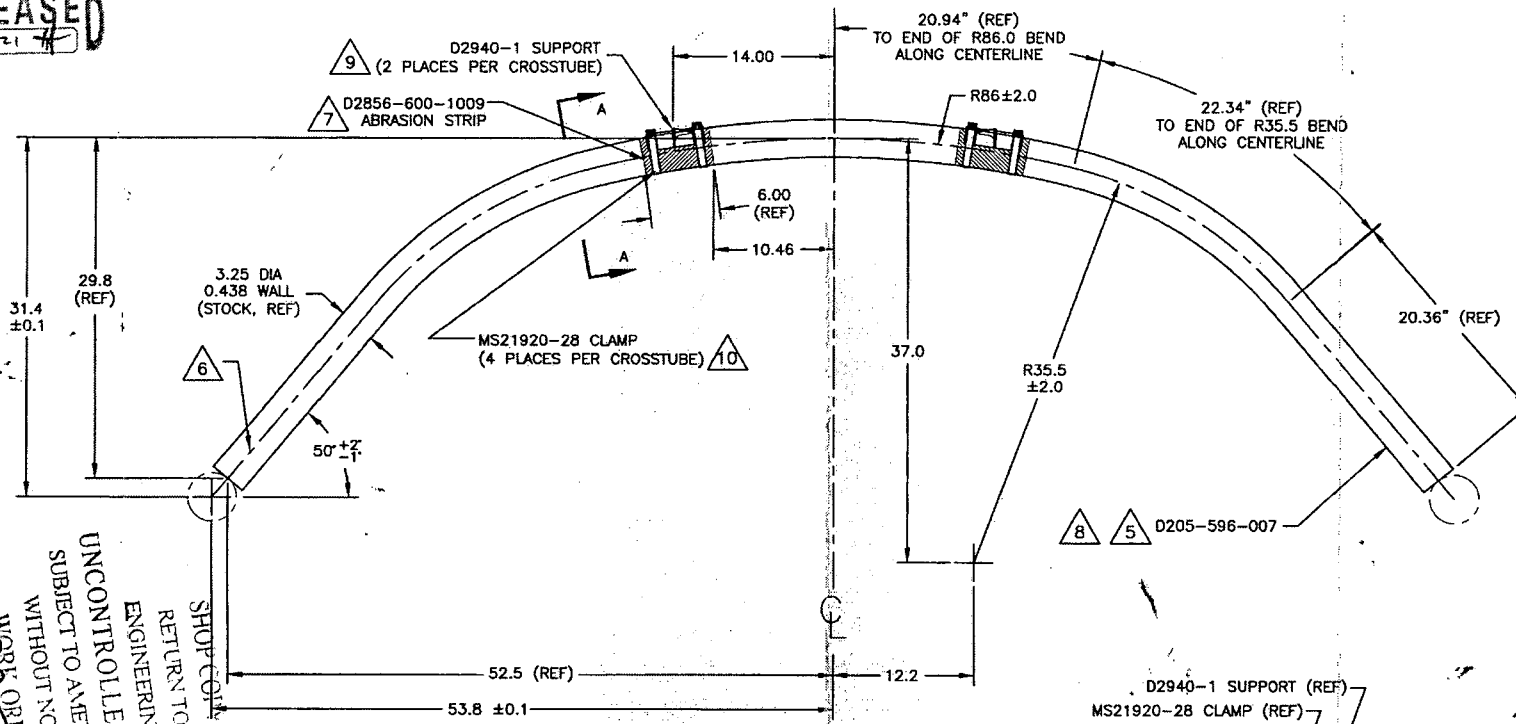
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

RELEASED

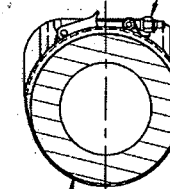


NO. 28546
 WORK ORDER
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 ENGINEERING
 RETURN TO
 SHOP COPY

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) MATERIAL: MANUFACTURE FROM D6008-180
FINISHED LENGTH = 127.28
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 6) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS
- 7) INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2940-1 SUPPORT, PER QSI 035
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) SEAL EDGES OF SUPPORTS USING SIKAFLEX-241/-291 SEALANT (OPTIONAL)
- 10) TORQUE CLAMPS 80 TO 100 IN-LB

D2940-1 SUPPORT (REF)
 MS21920-28 CLAMP (REF)



SECTION A-A
 SCALE 2:5

D2856-600-1009 ABRASION STRIP (REF) (7)

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A	02.11.20	NEW ISSUE
DESIGN	DRAWN BY	DART DART AEROSPACE LTD. HARRISBURG, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D205-596-107
DATE	02.11.20	TITLE CROSSTUBE AFT EXTENDED
		REV. A SHEET 1 OF 1 SCALE 1:10

Jason Murdoch

From: David Shepherd [dshepherd@dartaero.com]
Sent: Tuesday, January 23, 2007 12:57 PM
To: 'Jason Murdoch'
Cc: 'L Lacelle'; 'Dale Trepanier'; 'Susanne Sheldon'; 'Jean-Luc Menard'; 'Eric Charbonneau'; 'Bill Beckett'
Subject: RE: need to know

Jason,

I talked to Dan Paquette about this the last time I was there.
It is acceptable to me to REMOVE the Engineering approval of the cut height on the extra high gear crosstubes.

These are big money cuts and we put this check in place mainly due to a lack of confidence in the personnel involved in cutting them at the time.
As anybody who has tried to cut these things knows, it is not necessarily black and white.

I think the personnel involved are now capable of taking responsibility for these cuts.

David

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: Monday, January 22, 2007 4:47 AM
To: 'David Shepherd'
Cc: 'L Lacelle'; 'Dale Trepanier'
Subject: need to know

I was wondering if I was allowed to sign off on the 205 high gear x-tubes that need Eng. approval before being cut to height. I completed the dimension check, and signed that off, just the w/o says to have an Eng. sign. If I can inspect it, I should be able to sign for it?

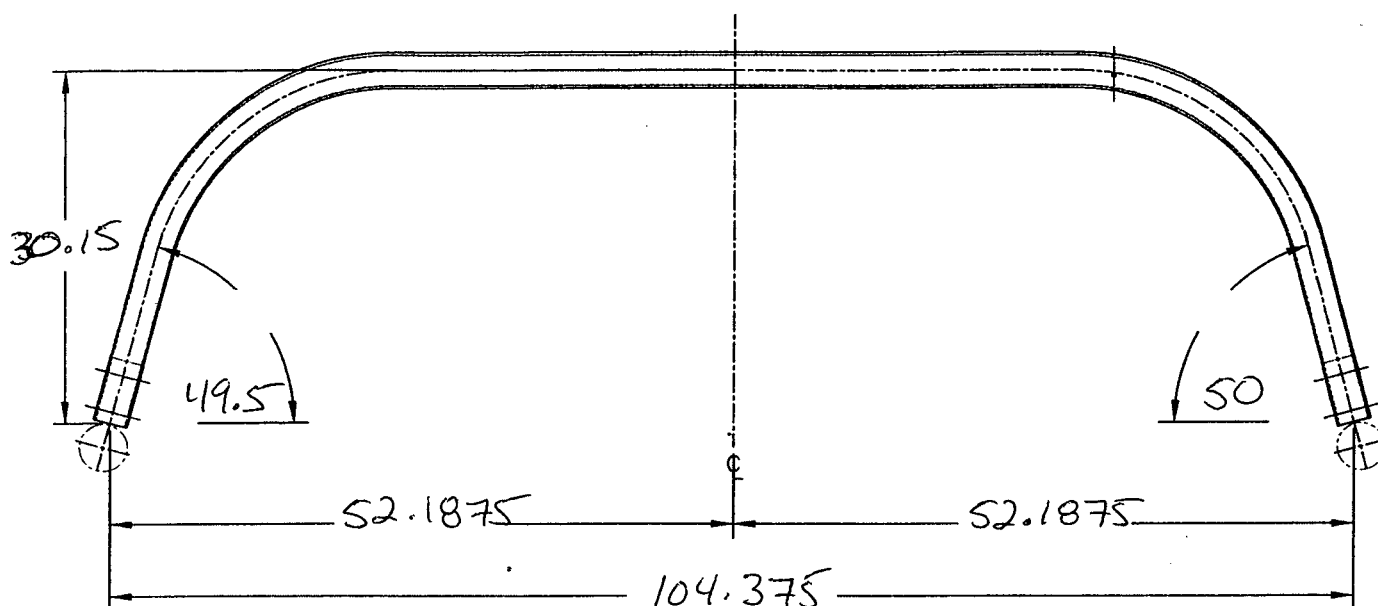
jmurdoch@dartaero.com
Q.C. COORDINATOR

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No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.1.410 / Virus Database: 268.17.3/642 - Release Date: 1/20/2007

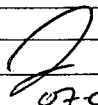
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No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.1.410 / Virus Database: 268.17.4/644 - Release Date: 1/22/2007

DART AEROSPACE LTD		Work Order:	28596
Description: Crosstube High-High Aft		Part Number:	D205-596-107
Inspection Dwg: D205-596-107 Rev: A		Page 1 of 1	

Required Dimension	Min	Max
Height	29.7	29.9
1/2 Span	52.4	52.6
Angle	49	52
Total Span	104.8	105.2



Comments
This tube was re-bent & measured @ .250" above max tolerance per e-mail. good.
See - email attached.

QC15 Inspection	
Date	
	0705-23

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

Jason Murdoch

From: David Shepherd [dshepherd@dartaero.com]
Sent: Wednesday, May 23, 2007 1:37 AM
To: 'Jason Murdoch'
Cc: 'Linda Lacelle'
Subject: FW:
Attachments: 205 Crosstube.jpg

B28596 is an acceptable deviation as outlined on the attached inspection sheet.

David

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: Tuesday, May 22, 2007 11:03 AM
To: 'David Shepherd'
Subject: FW:

Hi there Sir. Here are some dims off of the re-bend tube. We brought the one side in to match, and these measure ments are at .350" over nominal, .250" above the tolerance. Will this fit?

jmurdoch@dartaero.com

Q.C. COORDINATOR

From: Brigitte Golden [mailto:bgolden@dartaero.com]
Sent: Tuesday, May 22, 2007 12:53 PM
To: 'Jason Murdoch'
Subject:

Brigitte Golden
Order Processing
Dart Aerospace Ltd.
bgolden@dartaero.com

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.467 / Virus Database: 269.7.6/814 - Release Date: 5/21/2007 2:01 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.467 / Virus Database: 269.7.6/814 - Release Date: 5/21/2007 2:01 PM

5/23/2007

ANGLE: 50

TOTAL SPAN: 104.9

1/2 SPAN: 52-45

H: 50 77

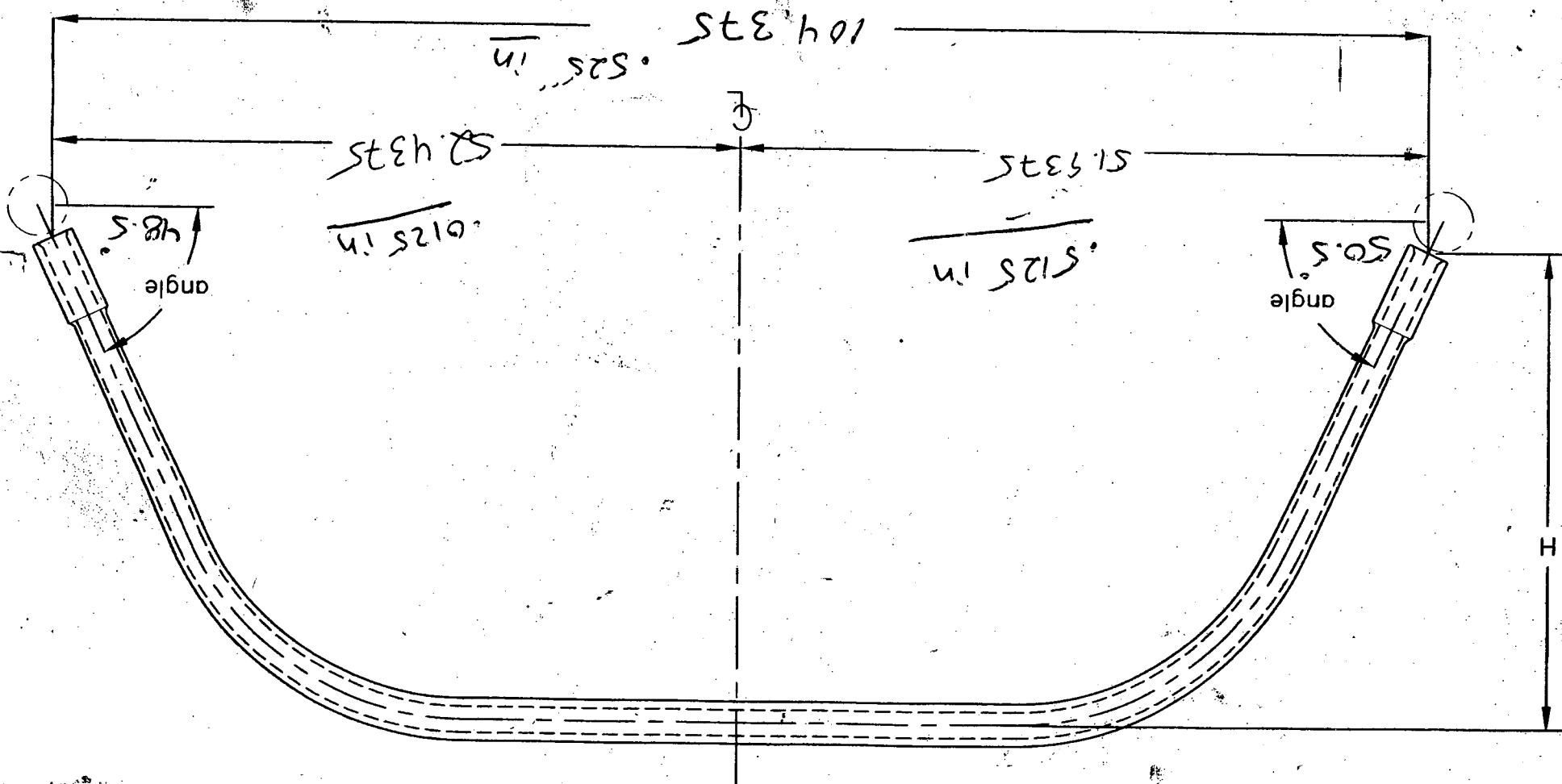
DRAWING: 205-536-007 Rev D.

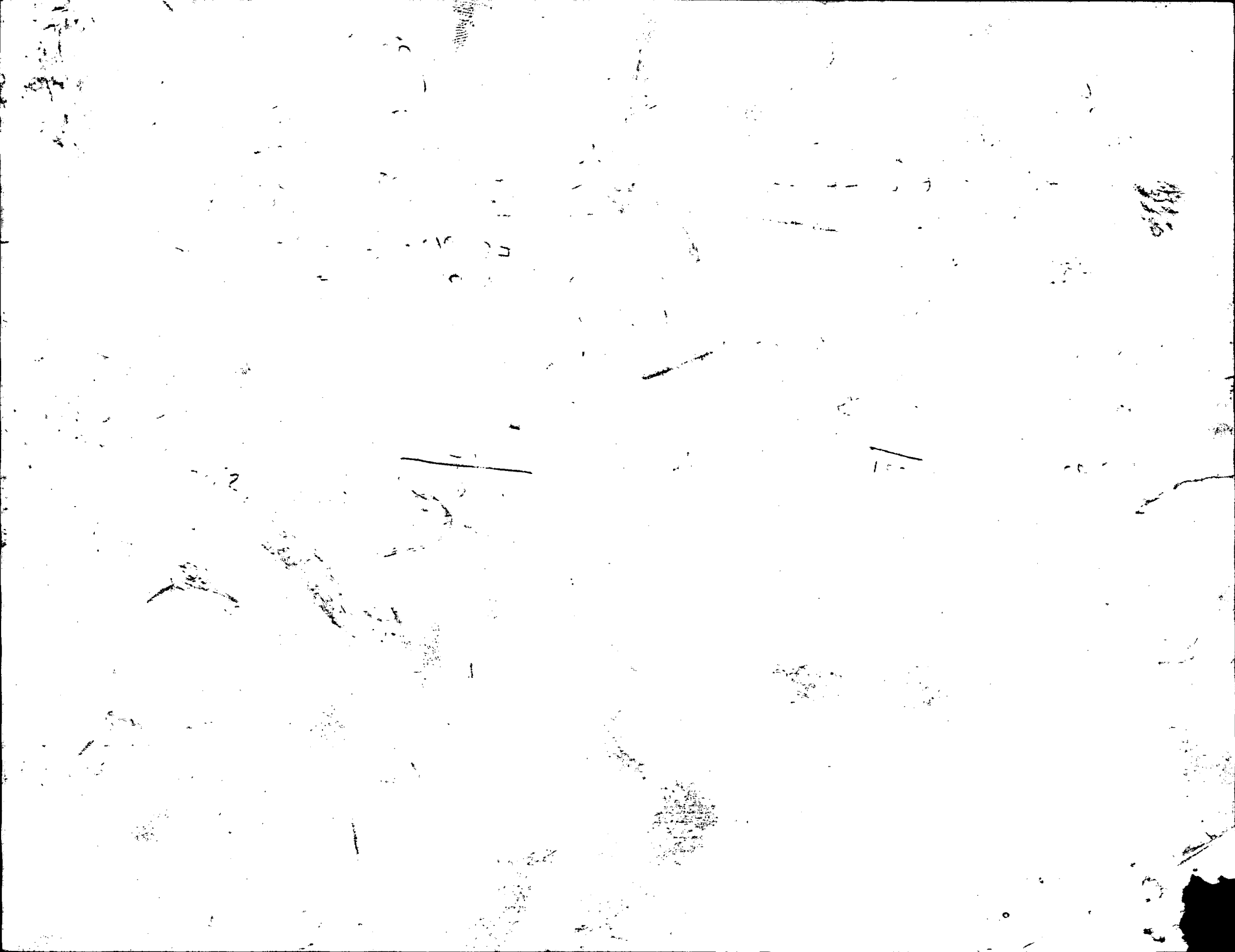
BATCH NO: _____

DESCRIPTION: 205-596-107

DATE: 06.03.14

Measurements were taken
at H-29.766 as per
Dwg. to center line of x-tube
not imaginary skid tube.
- 100 tolerance ??

$$+ve +ve +ve +ve$$




Eric Charbonneau

From: Jason Murdoch [jmurdoch@dartaero.com]
Sent: September 16, 2006 10:17 AM
To: echarbonneau@dartaero.com
Subject: FW: 205 x-tube

This is for the high gear D205-596-107. I put the dim sheet under your phone, and it's the tube on the board. Before they cut these tubes they will need eng. approval, and a new dim sheet for final dimensions. For the bending work orders, please I.D. the tubes with an A,B,C. thanx BonniZZZZZZZZZZle, you're the best.

jmurdoch@dartaero.com

Q.C. Inspector

From: David Shepherd [mailto:dshepherd@dartaero.com]
Sent: September 15, 2006 12:54 PM
To: 'Jason Murdoch'; davids@dartaero.com
Cc: 'Linda lacelle'; 'Dale Trepanier'; 'Dan Stow'
Subject: RE: 205 x-tube

Jason,

I would like to see this tube bent a little bit more on the 48.5 degree side to make things a little bit more symmetric.

Then, it will be acceptable to me.

When we cut it, we should cut it slightly high (maybe +0.25") to get the width as close as possible to nominal.

David

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: Thursday, September 14, 2006 11:15 AM
To: davids@dartaero.com
Cc: Linda lacelle; Dale Trepanier; Dan Stow
Subject: FW: 205 x-tube

Just in case I don't get your response, can you cc the listed.

jmurdoch@dartaero.com

Q.C. Inspector

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: September 14, 2006 1:07 PM
To: davids@dartaero.com
Subject: 205 x-tube

Here are some dimensions for a high gear. Is this acceptable?

jmurdoch@dartaero.com

Q.C. Inspector

From: Brigitte Golden [mailto:bgolden@dartaero.com]

9/18/2006

Sent: September 14, 2006 12:46 PM
To: jmurdoch@dartaero.com
Subject: scan

Brigitte Golden
Order Processing
Dart Aerospace Ltd.
bgolden@dartaero.com

--
No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.1.405 / Virus Database: 268.12.3/446 - Release Date: 9/12/2006

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No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.1.405 / Virus Database: 268.12.4/449 - Release Date: 9/15/2006

9/18/2006

